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[10191/2289]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES

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In re Application of: :  
Peter KNOLL et al. : Examiner: Andrew T. Sever  
For: DISPLAY APPARATUS :  
Filed: July 19, 2002 : Art Unit: 2851  
Serial No.: 10/088,727 :  
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MAIL STOP APPEAL BRIEF - PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

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Signature: [Signature]  
AARON C. DEDITCH  
(33,865)

REPLY BRIEF TRANSMITTAL

SIR:

Accompanying this Reply Brief Transmittal is a Reply Brief pursuant to 37 C.F.R. § 41.41 for filing in the above-identified patent application, together with two courtesy copies thereof (although not required). The two-month response date is September 26, 2005 (since September 25, 2005 is a Sunday, and since the Answer is dated July 25, 2005).

While no fee is believed to be due, the Commissioner is authorized to charge, as necessary and/or appropriate, any additional and appropriate fees (including any extension fees) or credit any overpayment to Deposit Account No. 11-0600. A duplicate copy of this transmittal letter is enclosed for that purpose.

Respectfully submitted,

Dated: 9/26/2005

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REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

SIR:

Appellant submits the present Reply Brief (the two-month response date for which is September 26, 2005 (since September 25, 2005 is a Sunday)) in response to the Examiner's Answer mailed on July 25, 2005 ("the Answer"). Although not required, two duplicate copies of this Reply Brief are also being submitted herewith as a courtesy to the Patent Office.

Regarding the STATUS OF AMENDMENTS Section, it is noted and understood that all amendments have been entered to date.

For the reasons set forth in the Appeal Brief and those set forth below, it is again respectfully submitted that the final rejections of claims 16 to 42 should be reversed.

**REMARKS**

The following is again submitted as regards the Answer of July 25, 2005:

**A. The Rejections Under 35 U.S.C. § 103(a) That Claims 16 to 26 and 31 to 42 Are Unpatentable Over Jost et al., U.S. Patent No. 4,919,517 In View of Kleinschmidt, U.S. Patent No. 6,750,832**

**Claims 16 to 26 and 31 to 42**

Claims 16 to 26 and 31 to 42 were rejected under 35 U.S.C. § 103(a) as unpatentable over Jost et al., U.S. Patent No. 4,919,517 (the “Jost” reference) in view of Kleinschmidt, U.S. Patent No. 6,750,832 (the “Kleinschmidt” reference).

As explained in the “Background Information” section of the present application, other display apparatuses in vehicles use virtual display images for observation by the vehicle drivers.

In contrast, the presently claimed subject matter concerns the use of a real image for display to the driver. Such a real display image has the advantage that image distortion associated with a virtual image may be eliminated. This is because the real image may be projected directly onto a display surface in a manner that is visible from several directions.

Essentially, the Answer argues that it would have been obvious to use a real image instead of the virtual image which has been the conventionally accepted approach for use in vehicles. What the Answer does not and cannot explain is why such an assertedly “obvious” solution was not adopted in lieu of the virtual image technology in the context of generating a real image onto a display surface on the instrument panel of the vehicle via a projection unit arranged on a vehicle roof and/or on an inside mirror of the vehicle, as provided for in the context of claims 16 and 33.

In fact, the Answer now seeks to rely on further references (see pages 3 and 4 of the Answer) -- not previously relied upon and/or argued by the Examiner to date – in view of the apparent deficiencies of the references of record. It is respectfully submitted that these references do not cure the critical deficiencies of the original obviousness assertions of the

Office, but that to the extent they are to be considered, the case should first be remanded to further examination so that the Applicants may have a full and fair opportunity to respond to them.

As previously explained, claims 16 and 33 provide for the generation of a real image onto a display surface on the instrument panel of the vehicle via a projection unit arranged on a vehicle roof and/or on an inside mirror of the vehicle. In this context, this is to *generate a real image*, and where due to the placement of the projection unit in the roof of the vehicle, an appropriate space-saving projection is possible. *In comparison to a backwards projected real image, for example, little space is required. Also, in contrast to a virtual image, the dependence on the viewing angle of a viewer is greatly-reduced.*

Also as previously explained, the “Jost” reference purportedly concerns an image-reproducing device for a motor vehicle. The “Jost” reference states that a real image is represented as a virtual image in the user's field of vision via a lens and the windshield following the lens in the path of the light rays. In the “Jost” reference, the real image and the lens are arranged at an upper edge of the windshield. Furthermore, a mirror element is arranged between the lens and the windshield within an area of the surface of an instrument panel. The “Jost” reference states that since the mirror element is arranged at a large distance from the lens element, the virtual image falling into the eye of the vehicle user is matched to the respective prevailing conditions. (Abstract, lines 1 to 13).

Accordingly, the “Jost” reference, whether taken alone or combined, does not disclose or suggest the features in which *a real image is generated* onto a display surface on the instrument panel of the vehicle via a projection unit arranged on a vehicle roof and/or on an inside mirror of the vehicle, as provided for in the context of claims 16 and 33. The “Jost” reference merely indicates that a image-reproducing device provides a displayed image as a virtual image on the windshield via a mirror. Accordingly, the image is perceived by a viewer as a virtual image. The image shown in the liquid crystal display is not directly visible to a viewer, who can only perceive the virtual image. The “Jost” reference does not disclose a real image that is generated onto a display surface outside the projection unit. Nothing in the “Jost” reference discloses or suggests the claim features of generating a real image onto a display surface on the instrument panel of the vehicle via a projection unit arranged on a

vehicle roof and/or on an inside mirror of the vehicle, as provided for in the context of claims 16 and 33.

*It is respectfully submitted that the Answer has not specifically refuted the fact that the obviousness rejections are not sustainable because it is based on the Final Office Action wrongly asserting that the projection surface according to “Jost” is suitable for generating a real image. To project a real image, a mirror surface cannot be used, for the light beams of the real image would only be diffracted by the mirror surface, so that a real image would not be visible for the observer. Hence light-diffusing surfaces are used as a projection surface for real images, so that the real image can also be projected onto this surface. By contrast, reflective surfaces, such as, for example, the windshield, are not suitable for the projection of real images. They can only be used to generate virtual images by a suitable deflection of light. Accordingly, it is respectfully requested that the obviousness rejections be withdrawn for these further reasons.*

Additionally, and as previously explained, the “Kleinschmidt” reference purportedly concerns an information display system with an output display, an optical device for deflecting an illumination beam path into a user's field of vision. The subdividable output display allows a user to partly obtain information in a vehicle via a head-up display and partly via a traditional or back-projection display. (Abstract, lines 1 to 10). Furthermore, the “Kleinschmidt” reference states that “FIG. 23 shows the combination of FIG. 19 and FIG. 20 with expansions” such that “[t]he virtual head-up display VINST/NRSP and the real, back-projected image are thus displayed combined on the diffuser DIF.” (Col. 15, lines 6 to 9).

Accordingly, the “Kleinschmidt” reference does not disclose or suggest, whether taken alone or combined with the primary reference, the features in which *a real image is generated* onto a display surface on the instrument panel of the vehicle via a *projection unit arranged on a vehicle roof and/or on an inside mirror of the vehicle*, as provided for in the context of claims 16 and 33, whether taken alone or with the “Jost” reference.

The “Kleinschmidt” reference merely indicates that an image is generated and displayed by a rear projection unit. Nothing in the “Kleinschmidt” reference, whether taken alone or combined with the primary “Jost” reference, discloses or suggests the claim features of generating a real image onto a display surface on the instrument panel of the vehicle via a

projection unit arranged on a vehicle roof and/or on an inside mirror of the vehicle, as provided for in the context of claims 16 and 33.

For the foregoing reasons, the combination of the “Jost” reference and the “Kleinschmidt” reference does not describe or suggest the features of claims 16 and 33, so that claims 16 and 33 are allowable.

Claim 17 to 26, 31 and 32 depend from claim 16, and are therefore allowable for the same reasons as claim 16. Claim 34 to 42 depend from claim 33, and are therefore allowable for the same reasons as claim 33.

As further regards all of the obviousness rejections argued herein, to reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Since the references relied upon do not disclose or even suggest all of the features of the rejected claims as explained above, it is respectfully submitted that these claims are allowable.

It is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to combine or modify the reference do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Final Office Action reflects a subjective “obvious to try” standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon.

In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by

showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

**Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.**

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

**Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [subject matter].**

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the Answer now seeks to belatedly cure its references by further relying on new additional references.

In fact, the Office Actions to date and the Answer offer only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify the reference to provide the claimed subject matter and its benefits to address the problems met thereby, and it is respectfully submitted that the assertions to date in this regard are insufficient since the Office must provide proper evidence of a motivation or suggestion for modifying a reference to provide the claimed subject matter.

In short, there is no evidence that the references relied upon, whether taken alone, combined or modified, would provide the features of the claims discussed above. It is therefore respectfully submitted that the claims are allowable for these reasons.

As further regards all of the obviousness rejections of the claims, it is respectfully submitted that not even a *prima facie* case has been made in the present case for obviousness, since the Office Actions to date never made any findings, such as, for example, regarding in any way whatsoever what a person having ordinary skill in the art would have been at the time the claimed subject matter of the present application was made. (*See In re Rouffet*, 47 U.S.P.Q.2d 1453, 1455 (Fed. Cir. 1998) (the “factual predicates underlying” a *prima facie* “obviousness determination include the scope and content of the prior art, the differences between the prior art and the claimed invention, and the level of ordinary skill in the art”)). It is respectfully submitted that the proper test for showing obviousness is what the “combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art”, and that the Patent Office must provide particular findings in this regard — the evidence for which does not include “broad conclusory statements standing alone”. (*See In re Kotzab*, 55 U.S.P.Q. 2d 1313, 1317 (Fed. Cir. 2000) (citing *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1618 (Fed. Cir. 1999) (obviousness rejections reversed where no findings were made “concerning the identification of the relevant art”, the “level of ordinary skill in the art” or “the nature of the problem to be solved”))). It is respectfully submitted that there has been no such showings by the Office Actions to date or by the Advisory Action.

In fact, the present lack of any of the required factual findings forces both Appellants and this Board to resort to unwarranted speculation to ascertain exactly what facts underlay the present obviousness rejections. The law mandates that the allocation of the proof burdens requires that the Patent Office provide the factual basis for rejecting a patent application under 35 U.S.C. § 103. (*See In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984) (citing *In re Warner*, 379 F.2d 1011, 1016, 154 U.S.P.Q. 173, 177 (C.C.P.A. 1967))). In short, the Examiner bears the initial burden of presenting a proper *prima facie* unpatentability case — which has not been met in the present case. (*See In re Oetiker*, 977 F.2d 1443, 1445, 24, U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992)).



**B. The Rejections Under 35 U.S.C. § 103(a) That Claims 27 to 30  
Are Unpatentable Over Jost et al., U.S. Patent No. 4,919,517 In  
View of Kleinschmidt, U.S. Patent No. 6,750,832, And  
Further In View of Hwang et al., U.S. Patent No. 6,317,170**

**Claims 27 to 30**

Claims 27 to 30 were rejected under 35 U.S.C. § 103(a) as unpatentable over the “Jost” reference in view of the “Kleinschmidt” reference and further in view of Hwang et al., U.S. Patent No. 6,317,170 (the “Hwang” reference).

Claims 27 to 30 depend from claim 16, and are therefore allowable for essentially the same reasons as claim 16, as explained above.

This is because the “Hwang” reference does not cure the critical deficiencies of the “Jost” reference and the “Kleinschmidt” reference, as explained above. The “Hwang” reference only refers to a projection unit which uses a laser arrangement. There is no suggestion in the references relied upon to show the virtual image as a real image via a projection unit arranged on a vehicle roof and/or on an inside mirror of the vehicle, as provided for in the context of claim 16. The system of the “Hwang” leads away from the presently claimed subject matter, since it replaces the liquid crystal display image with a laser image, so that even if the references are combined (the properness of which is not conceded), the resulting combination still does not provide for displaying a real image on a display surface outside of the projection unit arranged on a vehicle roof and/or on an inside mirror of the vehicle, such that claim 16 is allowable. Accordingly, since claims 27 to 30 depend from claim 16, and for the further reasons provided here as to the third-level reference.

It is therefore respectfully requested that the obviousness rejections as to all of the claims 16 to 42 be reversed.

Accordingly, it is respectfully submitted that claims 16 to 42 are allowable for the above reasons.

U.S. Pat. App. Ser. No. 10/088,727  
Att. Docket No. 10191/2289  
Reply to Answer of July 25, 2005

CONCLUSION

In view of the above, it is respectfully requested that the rejections of claims 16 to 42 be reversed, and that these claims be allowed as presented.

Dated: \_\_\_\_\_

9/26/2005

Respectfully submitted,

By: \_\_\_\_\_

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